Chapter 3. Utilization by Practitioner Specialty

Introduction

The statute establishing the Medical Care Data Base (MCDB) directs the Commission to report on utilization by practitioner specialty. This directive was due to the Maryland Legislature's recognition that patterns of practice and reimbursement differed by specialty. Comparing utilization by specialty continues to enable policymakers to understand how health care delivery is changing as the result of changing patient needs and evolving payer practices. For many specialties, the scope of practice is relatively narrow and these analyses can provide useful information on the average cost of treatment across each payer setting. For specialties that offer a broad range of services, differences in practice style often result in different blends of resource use even across delivery systems. For example, a study that compared care provided for acute illness episodes in HMO and non-HMO patients concluded that overall HMO savings, adjusted for case mix, were explained by the specialty of the physicians the patients first visited, especially for patients with average health.[1] Of the estimated $6.2 billion practitioner care services received by Maryland residents in 1998, about two thirds were for services provided by physicians and one-third for non-physician health professional services, including freestanding facilities, such as ambulatory surgery centers.[2]

This chapter examines practitioner utilization by the specialty that delivered the service. It begins with information on the availability of physician specialties in Maryland. Practitioner supply is important because the number and types of practitioners available have a direct influence on the utilization of health care services and their associated costs. Although non-physician professionals account for about one third of expenditures, information is limited to physicians because equivalent information on the supply of other practitioner specialties is not available. The majority of the chapter is dedicated to examining utilization of the different specialties by patients under four types of insurance. Each payer type is characterized by the average number of work relative value units (RVUs) and the related payments provided by each of the major specialty groups. Then the specialty mix – how total payments and RVUs are distributed among the specialties – of non-HMO services is compared to HMO FFS services. Additionally, the information on the proportion of all patients seen by each specialty is presented for each payer type.

The sources and limitations of the data used for these analyses are discussed in Chapter 1. Two of the more important limitations with regard to the specialty analyses are the absence of uninsured services in the MCDB and inconsistencies in specialty coding by payers. Most "alternative" health care is not covered by insurance, therefore the MCDB is not suitable for determining how much of practitioner payments are for alternative health care. Specialty coding by payers in the MCDB is not consistent so a certain amount of

[1] Flood AB, et al. "How Do HMOs Achieve Savings?" *HSR: Health Services Research 33:1 (April 1998), pp 79-99*.

[2] This is the estimated expenditure if public HMO capitation payments are distributed among the service categories in proportions typical of private HMOs in Maryland. Maryland Health Care Commission. *State Health Care Expenditures: Experience from 1998*, Table 3-2, p 26.

error inevitably occurs in the specialty-based analyses based on the MCDB. The MCDB data used for the analyses in Chapters 2, 3, 4, and 5 excludes all dental services and HMO capitated services, which do not have payment information.

Physician Supply

Maryland continues to have more physicians per 100,000 residents than the nation. This trend has existed since MHCC began reporting information on physician supply in 1995, although the per capita supply of physicians has grown annually both nationwide and in Maryland. Given the state's relatively high per capita income and percent of population who are insured,[3] a greater supply of physicians does not necessarily translate into relatively lower prices for medical services. Table 8 provides information on the supply of physicians (medical doctors and doctors of osteopathy) by selected specialties in Maryland as compared to the region and nation. Maryland physician supply (312 per 100,000) is 16 percent higher than the regional average[4] and 36 percent higher than the national average.[5] Within major categories, Maryland's relative supply is 22 percent higher than the national average for primary care physicians, 35 percent higher in the surgical specialties, and 47 percent higher in the medical and other specialties. Compared to the nation, Maryland's higher overall physician supply extends to every major specialty subcategory with the exceptions of general practice and family medicine physicians. The state's supply of general practice and family medicine physicians is about one-third below the national average and 39 percent below that of the region. Compared to its region, Maryland's supply matches that of the region in three of the subspecialty categories: general surgeons, urologists, and radiologists.

This comparatively large supply of physicians in Maryland can be attributed to many factors, including the presence of two major medical schools; several major teaching hospitals in Maryland and DC, a large number of residency programs; and a highly urbanized, relatively high-income and well-insured populace. Given the medical school presence, the relative supply of office-based patient care physicians vs. non-office-based physicians (hospital staff plus medical and osteopathic residents) is worth examining. Among all patient care physicians, Maryland has a physician supply of 227 office-based physicians per 100,000 population compared to 85 non-office-based physicians per 100,000 population, a ratio of approximately 2.7 to 1. This contrasts with ratios of 2.9 and 3.2 for the region and the nation, respectively. Thus, while Maryland has a larger per

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[3] *Current Population Survey*, March 1998.

[4] States adjacent to Maryland included in the regional average are Pennsylvania, Delaware, District of Columbia, Virginia, and West Virginia.

[5] Tables 8 and 9 include only non-federal physicians who are employed in patient care. The tables exclude federally employed physicians, physicians whose primary activities are research, administration, or other, or who are no longer actively practicing. If physicians employed by federal agencies in Maryland were included, such as those employed by the National Institutes of Health, the National Naval Medical Center at Bethesda, Maryland, the Uniformed Services University of the Health Sciences, the Agency for Healthcare Research and Quality, the Health Care Financing Administration, the Food and Drug Administration, and others, the supply of physicians in Maryland would be relatively even larger compared to the region and to the country as a whole.

capita supply of both office-based physicians and non-office-based physicians than the region or the nation, Maryland is somewhat more dependent on the latter category of hospital-based physicians than either the region or the nation. This relative dependence on non-office-based physicians providing direct patient care cuts across all three major categories of physician personnel. For example, the ratio of office-based physicians to non-office-based physicians among primary care physicians is 2.6, but the ratio is 3.5 among physicians with surgical specialties.

TABLE 8
PHYSICIAN SUPPLY* OF SELECTED SPECIALTIES
IN MARYLAND, ADJACENT STATES, AND THE UNITED STATES – 1997

SPECIALTY	PHYSICIANS IN PATIENT CARE PER 100,000 POPULATION**				
	Maryland		Maryland Total	Maryland and Adjacent States***	United States
	Office Based	Non-Office			
All Specialties	**227**	**85**	**312**	**268**	**230**
Primary Care	**75**	**29**	**104**	**98**	**85**
General & Family Practices	19	4	23	38	34
Internal Medicine	37	18	54	41	35
Pediatrics	19	7	26	19	16
Surgical Specialties	**57**	**16**	**73**	**62**	**54**
General Surgery	12	6	18	17	14
OB-GYN	17	4	21	17	14
Orthopedic Surgery	8	2	10	9	8
Ophthalmology	8	2	9	7	6
Urology	4	0	4	4	4
Other Surgical Specialties	8	2	10	8	8
Medical & Other Specialty Care	**95**	**40**	**135**	**109**	**92**
Psychiatry	18	7	26	18	15
Anesthesiology	12	4	16	12	12
Radiology	10	4	14	14	11
Internal Medicine Subspecs	11	4	15	11	9
Emergency Medicine	6	3	9	8	7
Other Specialties	39	18	56	45	38

* Doctors of medicine and osteopathy.

** Source: MHCC calculations based on U.S. Department of Health and Human Services, Health Resources and Services Administration, Bureau of Health Professions, *Area Resource File: February 1999 Release.*

***Table represents non-federal physicians in patient care per 100,000 population based on (1) American Medical Association Physician Masterfiles (1997) and American Osteopathic Association data (1995) from the *Area Resource File*, and (2) Bureau of the Census population estimates, reference No. 1.

Table 9 documents the regional variations in relative physician supply across the state. In terms of total physician supply engaged in patient care, the National Capital Area (NCA) has the largest supply at 355 physicians per 100,000 population compared to most regions. The NCA has over three times the physicians in Southern Maryland at 104 physicians per 100,000 population, and more than double that of the Eastern Shore and Western Maryland at 155 and 161 per 100,000 population, respectively. The NCA has approximately 10 percent more medical specialists per 100,000 population, the same number per 100,000 for primary care physicians, yet 20 percent fewer surgical specialists than the Baltimore Metro Area.

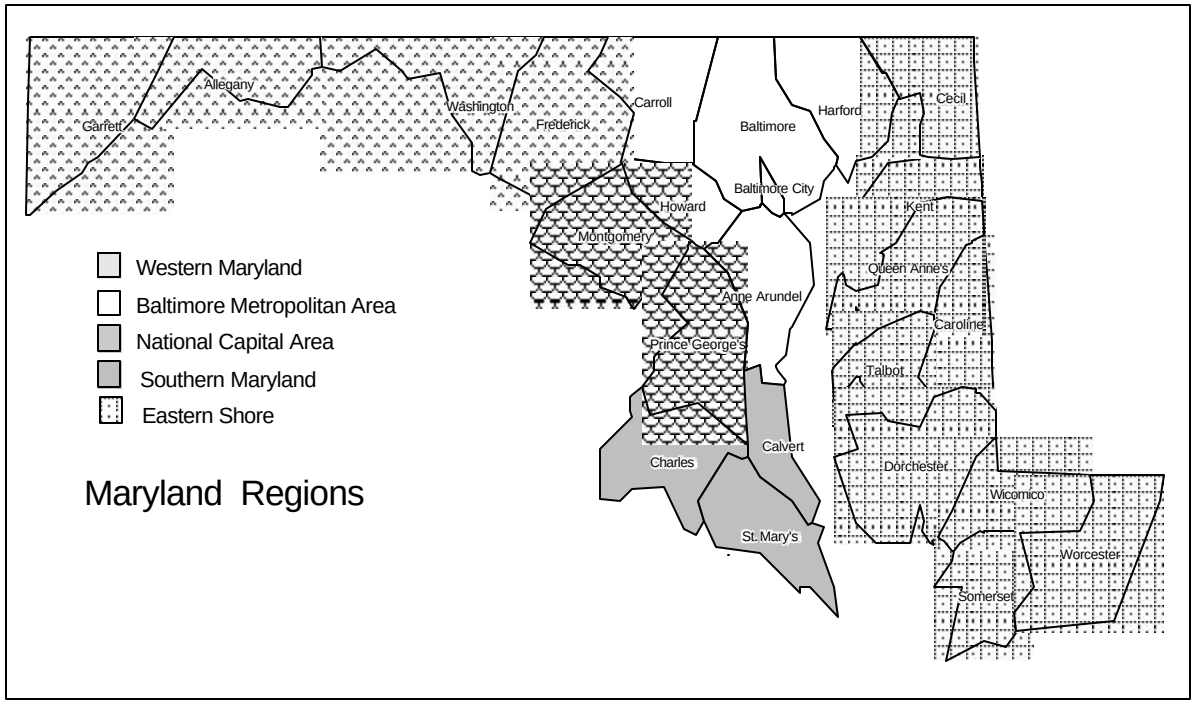
TABLE 9
PHYSICIAN SUPPLY* IN MARYLAND REGIONS - 1997**

SPECIALTY	PHYSICIANS IN PATIENT CARE PER 100,000 POPULATION***									
	National Capital Area		Baltimore Metro Area		Eastern Shore		Western Maryland		Southern Maryland	
	Office Based	Non-Office	Office Based	Non-Office	Office Based	Non-Office	Office Based	Non-Office	Office Based	Non-Office
All Specialties	**269**	**86**	**244**	**113**	**135**	**20**	**141**	**20**	**92**	**12**
Primary Care	**87**	**30**	**79**	**38**	**51**	**9**	**51**	**4**	**38**	**4**
General & Family Practices	19	6	18	4	22	2	26	2	14	1
Internal Medicine	44	17	41	25	19	5	16	2	14	1
Pediatrics	24	7	20	9	10	2	8	0	8	0
Surgical Specialties	**60**	**12**	**64**	**25**	**33**	**2**	**40**	**4**	**26**	**2**
General Surgery	12	5	14	9	8	1	8	2	6	0
OB-GYN	19	3	19	6	10	1	10	1	7	1
Orthopedic Surgery	8	1	9	3	5	1	8	0	5	0
Ophthalmology	8	1	8	3	5	0	5	0	3	0
Urology	5	0	4	0	5	0	4	0	1	1
Other Surgical Specialties	8	1	10	3	3	0	7	0	3	0
Medical and Other Specialty Care	**122**	**44**	**100**	**51**	**50**	**9**	**50**	**11**	**29**	**6**
Psychiatry	25	7	19	10	9	2	6	2	2	1
Anesthesiology	13	5	14	6	6	1	7	2	4	1
Radiology	12	3	11	5	6	1	7	0	3	0
Internal Medicine Subspecs	16	5	11	4	5	0	5	1	2	0
Emergency Medicine	7	3	5	4	5	2	4	2	3	0
Other Specialties	50	22	40	21	19	3	22	4	15	3

* Doctors of medicine and osteopathy.

** Source: MHCC calculations based on U.S. Department of Health and Human Services, Health Resources and Services Administration, Bureau of Health Professions, *Area Resource File: February 1999 Release*.

***Table represents non-federal physicians in patient care per 100,000 population based on (1) American Medical Association Physician Masterfiles (1997) and American Osteopathic Association data (1995) from the *Area Resource File*, and (2) Bureau of the Census population estimates, reference No. 1.



The regional variations in the numbers of non-office-based physicians are more pronounced than those found for office-based physician rates. The Baltimore Metro Area, home of Maryland's two medical schools and its largest teaching hospitals, has the highest number of non-office-based physicians at 113 per 100,000 population. The Baltimore Metro Area has a larger relative supply of hospital-based physicians than the NCA in every specialty except general and family practice, internal medicine subspecialties, and miscellaneous specialists. Both Baltimore and the NCA have far higher endowments of hospital-based physicians than the Eastern Shore, Western Maryland, and especially Southern Maryland, in accordance with the proximity to medical schools in Maryland and the DC and the locations of major teaching hospitals. These differences hold for most of the specialties listed in Table 9.

Utilization of Practitioner Specialties by All Recipients of Each Payer

This section characterizes each payer's typical utilization of the various practitioner specialties using the mean payment and number of work RVUs per recipient (user of services), shown in Table 10.[6] (See also Appendix D.) The values listed for each specialty sum to that payer's average total utilization per recipient. Mean total utilization is highest overall for Medicare non-HMO recipients for reasons discussed in Chapter 2. Within both Medicare and private insurers, overall utilization is much lower in HMOs mainly due to the absence of capitated HMO services.

[6] In Table 10, the number of recipients is the total patients in each delivery system category. For all specialties in Table 10, the denominator is a constant number and includes persons who did not use that type of specialist along with those who did.

TABLE 10
ALLOCATION OF MEAN TOTAL PAYMENT AND WORK RVUs PER RECIPIENT
BY PRACTITIONER SPECIALTY AND PAYER - 1998

SPECIALTY	PRIVATE INSURANCE			MEDICARE		
	All Private	Private Non-HMO	Private HMO FFS	All Medicare	Medicare Non-HMO	Medicare HMO FFS
MEAN PAYMENT PER RECIPIENT						
Primary Care Physicians	**$175**	**$215**	**$106**	**$338**	**$364**	**$135**
General Practice	36	54	6	12	12	5
Family Practice	25	28	20	52	55	29
Internal Medicine/Geriatrics	47	53	36	270	291	99
Pediatrics	37	33	43	1	1	2
Freestanding Clinic	29	46	0	4	5	0
Specialty Care Physicians	**341**	**340**	**343**	**1,243**	**1,322**	**624**
General Surgery	16	15	18	70	74	37
Anesthesiology	20	21	19	49	53	20
Cardiology	22	19	26	171	178	117
Emergency Medicine	15	13	18	34	36	18
Gastroenterology	10	9	12	54	57	31
Oncology	10	11	8	108	118	23
Ophthalmology	11	12	10	122	134	29
Orthopedic Surgery	24	22	27	80	85	40
Radiology	42	47	32	153	162	75
Urology	7	8	7	67	71	32
Obstetrics/Gynecology	45	40	54	16	17	11
Other Specialty Care Physicians	120	125	112	319	336	191
Physicians Without a Specialty Identified	**42**	**41**	**44**	**25**	**11**	**132**
Non-Physician Health Care Professional	**74**	**91**	**45**	**81**	**81**	**78**
Chiropractor	15	22	3	5	6	1
Podiatrist	8	9	6	37	40	7
Physical Therapist	17	20	11	8	8	9
Clinical Social Worker/Psychologist	14	18	8	8	8	1
Other Non-Physician Health Care Professional	20	22	17	24	19	59
Other Providers	**100**	**131**	**44**	**151**	**143**	**218**
Ambulance Services	1	1	1	56	63	8
Independent Laboratory	36	53	6	64	70	12
Unidentified Specialty	22	34	1	0	0	4
Other Miscellaneous Providers	40	43	35	31	10	195
Total	**732**	**818**	**581**	**1,839**	**1,922**	**1,187**

TABLE 10 (continued)

SPECIALTY	PRIVATE INSURANCE			MEDICARE		
	All Private	Private Non-HMO	Private HMO FFS	All Medicare	Medicare Non-HMO	Medicare HMO FFS
MEAN WORK RVUs PER RECIPIENT						
Primary Care Physicians	**2.29**	**2.76**	**1.47**	**5.69**	**6.15**	**2.09**
General Practice	0.38	0.55	0.07	0.21	0.22	0.07
Family Practice	0.33	0.35	0.28	0.90	0.96	0.46
Internal Medicine/Geriatrics	0.64	0.72	0.51	4.50	4.88	1.54
Pediatrics	0.52	0.47	0.61	0.02	0.02	0.03
Freestanding	0.43	0.67	0.00	0.06	0.07	0.00
Specialty Care Physicians	**4.28**	**4.15**	**4.50**	**17.37**	**18.45**	**8.96**
General Surgery	0.23	0.19	0.29	1.31	1.39	0.67
Anesthesiology	0.20	0.21	0.18	0.19	0.15	0.50
Cardiology	0.21	0.19	0.25	2.09	2.20	1.28
Emergency Medicine	0.21	0.18	0.27	0.65	0.70	0.32
Gastroenterology	0.13	0.11	0.16	0.83	0.88	0.48
Oncology	0.13	0.13	0.12	1.50	1.65	0.36
Ophthalmology	0.15	0.16	0.14	1.79	1.97	0.42
Orthopedic Surgery	0.31	0.27	0.39	1.16	1.23	0.64
Radiology	0.40	0.48	0.27	1.58	1.68	0.79
Urology	0.10	0.10	0.10	0.91	0.96	0.48
Obstetrics/Gynecology	0.60	0.51	0.77	0.29	0.30	0.19
Other Specialty Care Physicians	1.60	1.62	1.57	5.07	5.36	2.82
Physicians Without a Specialty Identified	**0.41**	**0.35**	**0.51**	**0.37**	**0.20**	**1.76**
Non-Physician Health Care Professional	**1.08**	**1.30**	**0.70**	**1.37**	**1.43**	**0.89**
Chiropractor	0.24	0.35	0.05	0.10	0.11	0.02
Physical Therapist	0.25	0.28	0.20	0.13	0.13	0.17
Clinical Social Worker/Psychologist	0.27	0.32	0.20	0.24	0.27	0.02
Other Non-Physician Health Care Prof.	0.21	0.23	0.17	0.32	0.29	0.55
Other Providers	**0.97**	**1.29**	**0.42**	**1.93**	**2.00**	**1.33**
Ambulance Services	0.01	0.02	0.01	0.59	0.65	0.09
Independent Laboratory	0.54	0.76	0.16	1.18	1.28	0.39
Unidentified Specialty	0.22	0.35	0.01	0.00	0.00	0.04
Other Miscellaneous Providers	0.19	0.17	0.24	0.16	0.08	0.81
Total	**9.03**	**9.85**	**7.61**	**26.73**	**28.23**	**15.04**

Private Non-HMO

Non-HMO recipients average total payments of $818 and 9.85 work RVUs per recipient in practitioner services. The allocation patterns of mean total payments per recipient and mean RVUs are similar. As a group, specialty care physicians account for the most utilization at $340 and 4.15 RVUs per recipient while primary care physicians rank second with means of $215 and 2.76. Outside of physicians, the "other providers" group has a higher average payment per recipient ($131) than do non-physician health care providers ($91). This category includes freestanding laboratories, ambulance services, and practitioners not otherwise categorized. The reimbursement rates for primary care and

specialty care physicians are similar, $78 and $82 per RVU, respectively. Physicians without a specialty identified have the highest reimbursement rate of $117, indicating that these may really be other types of providers rather than physicians. As stated at the outset of the chapter, this category probably represents a mix of different providers since a number of payers were unable to code consistently.

Of physicians with an identified specialty, radiologists average the highest utilization at $47 and 0.48 work RVUs per recipient, while obstetricians/gynecologists rank second with average payments of $40 and 0.51 work RVUs. Among primary care physicians, general practice and internal medicine physicians have the highest mean payments, $53-54, but internal medicine accounts for more RVUs: 0.72 vs. 0.54. The largest mean payments per recipient for identified non-physician practitioners are received by chiropractors and physical therapists at $22 (0.35 RVUs) and $20 (0.28 RVUs), respectively. Finally, in the "other providers" category, independent laboratories rank first in utilization with mean payments of $53 and mean RVUs (0.76) greater than any of the listed specialties.

Private HMO FFS

HMO FFS recipients average total payment of $581 and 7.61 work RVUs per recipient, 29 and 23 percent, respectively below the non-HMO means. As in non-HMO services, specialty care physicians as a group account for the most utilization at $343 and 4.50 RVUs per recipient while primary care physicians rank second with means of $106 and 1.47 RVUs. In contrast, the HMO FFS mean utilization in specialty care physicians is in fact higher, suggesting that HMO patients actually average about the same payment and about 8 percent more RVUs for FFS services. Interestingly, the FFS utilization rates for primary care physicians and non-physician health care professionals are about half those of non-HMO patients, and utilization of "other providers" is two-thirds less. This latter group has about the same average payment per recipient ($44) as the non-physician health care providers ($45). HMO FFS payments per RVU are 7 and 8 percent below non-HMO reimbursement rates for physicians and non-physician practitioners, respectively, but for "other providers" the HMO rate is slightly higher.

Unlike the private non-HMO payer group, the highest mean payment among physicians with an identified specialty goes to obstetricians/gynecologists at $54 with 0.77 work RVUs, about one-third and one-half above the respective means for non-HMO services. Other specialty care physicians with HMO FFS utilization greater than the averages for non-HMO recipients include cardiology, gastroenterology, orthopedic and general surgery, and emergency medicine, which averages 38 percent more dollars per recipient than non-HMO services. However, radiologists at $32 per recipient get 32 percent less than their mean payment for non-HMO recipients. Within the primary care physician group, average utilization of pediatricians is 30 percent higher than in non-HMO services at $43 and 0.61 RVUs, an exception to the lower HMO FFS utilization means for primary care physicians stated above. Among non-physician practitioners, physical therapists have the highest average payment of $11, in "other providers" the miscellaneous providers with $35 rank highest.

Medicare Non-HMO and HMO FFS

Mean utilization per recipient for Medicare non-HMO services is $1,922 and 28.23 work RVUs vs. Medicare HMO FFS figures of $1,187 and 15.04 RVUs, which are 38 and 47 percent lower, respectively. Unlike the private sector, Medicare HMO FFS utilization rates are lower for all physician specialties, mean payments to non-physician practitioners are about the same, and mean payments to "other providers" are considerably higher than the respective average payments for Medicare non-HMO recipients. Grouped together, specialty care physicians account for the highest utilization for both non-HMOs at $1,322 and 18.45 RVUs and HMOs at $624 and 8.96 RVUs, a difference of about one-half. For primary care physicians, HMO FFS average utilization is nearly two-thirds below the non-HMO values. At $218, the HMO FFS average payment to "other providers" is more than 50 percent above the $143 mean payment in traditional Medicare. Although private HMO FFS services are more concentrated in specialist care, the FFS services for Medicare HMOs are more concentrated in non-physician services, especially those delivered by "other providers."

HMO FFS payments per RVU are about 16 percent above those in traditional Medicare, but vary dramatically according to specialty. The HMO rates are higher for most categories: "other providers" by nearly 130 percent, non-physician health practitioners by 36 percent, and primary care physicians by 9 percent. For physician specialists, however, HMO rates are about 3 percent lower, on average, although lower rates occur for only half of the specialist categories listed in Table 10.

In traditional Medicare, the highest mean utilization among individual specialties is for internal medicine/geriatrics at $291 and 4.86 RVUs, followed by cardiology at $178 and 2.20 RVUs. The most utilized individual specialties in HMO FFS are internal medicine/geriatrics at $99 and 1.54 RVUs and cardiology at $117 and 1.28 RVUs. Cardiology is also notable for being the specialty with the smallest payment difference between non-HMO and HMO settings at 34 percent. Among “other providers,” the highest mean payment is for independent laboratories in traditional Medicare at $70 (1.28 RVUs), followed by ambulance services at $63. In HMO FFS, miscellaneous specialties account for $195 of the $218 total mean for this category. On a similar note, the settings differ in which non-physician health care practitioners are most significant: podiatrists ($40) rank first, in traditional Medicare the “other” subcategory is the highest ($59) in HMO FFS.

Differences in Specialty Mix by Delivery System

Table 11 illustrates the typical specialty mix of each payer by presenting the percentage distributions of payments and work RVUs by practitioner specialty and payer. These percentages explain how the overall mean values were allocated among the specialties in Table 10.

Private Non-HMO and HMO FFS

The largest proportions of practitioner payments are allocated to specialty care physicians. The private HMO FFS payers spend proportionately more on specialty care physicians than do non-HMO payers, 59 percent vs. 42 percent. Given that the majority of payments are allocated to specialty care physicians by HMOs, it is not surprising that they spend proportionately less than non-HMOs on all other major practitioner categories. Since payments tend to correspond to RVUs, both primary and specialty care show similar proportions of payments and work RVUs.

Among specialty care physicians, the proportions of total HMO payments and RVUs allocated to individual specialties are above the non-HMO percentages for all categories, except radiology. Obstetricians/gynecologists account for the largest shares of payments and RVUs in HMO FFS services with nearly one-fifth of total payments. In non-HMOs, obstetricians/gynecologists account for the most specialty care RVUs, but radiology accounts for the most payments with a payment share similar to the corresponding percentage in HMO FFS. Among primary care physicians, general practitioners account for the largest share of payments in non-HMO services, while pediatrics accounts for the largest share of HMO FFS primary care payments.

Medicare Non-HMO and HMO FFS

The highest proportion of total payments allocated to specialty care occurs in traditional Medicare at 69 percent. Unlike the private sector, the HMO FFS share allocated for Medicare recipients to specialists is below that of non-HMO services, and the same is true for primary care and non-physician health care professionals. These reduced concentrations are balanced by a payment share for the "other provider" category in HMOs that is nearly 2.5 times the percentage in traditional Medicare.

Among physician specialists, cardiologists receive nearly similar shares of payments in both delivery systems, 9-10 percent of total payments. Oncology is the physician specialty that ranks next with about 6 percent of total payments in non-HMO services, and radiology in HMO FFS services. In primary care physicians, internal medicine/geriatrics receives the largest proportion of payments regardless of delivery system. This specialty receives a higher share of payments in traditional Medicare than any other identified specialty, while in HMO FFS cardiology ranks first.

TABLE 11
DISTRIBUTION OF TOTAL PAYMENTS AND WORK RVUs
BY PRACTITIONER SPECIALTY AND PAYER - 1998

SPECIALTY	PRIVATE INSURANCE			MEDICARE		
	All Private	Private Non-HMO	Private HMO FFS	All Medicare	Medicare Non-HMO	Medicare HMO FFS
DISTRIBUTION OF PAYMENTS						
Primary Care Physicians	**23.9**	**26.3**	**18.2**	**18.4**	**19.0**	**11.4**
General Practice	5.0	6.6	1.1	0.6	0.6	0.4
Family Practice	3.4	3.5	3.4	2.8	2.9	2.5
Internal Medicine/Geriatrics	6.4	6.5	6.3	14.7	15.2	8.4
Pediatrics	5.0	4.1	7.5	0.1	0.1	0.1
Freestanding Clinic	4.0	5.6	0.0	0.2	0.2	0.0
Specialty Care Physicians	**46.6**	**41.6**	**59.1**	**67.6**	**68.8**	**52.6**
General Surgery	2.2	1.8	3.2	3.8	3.9	3.1
Anesthesiology	2.7	2.5	3.3	2.7	2.8	1.7
Cardiology	3.0	2.3	4.5	9.3	9.3	9.8
Emergency Medicine	2.0	1.5	3.1	1.8	1.9	1.5
Gastroenterology	1.3	1.1	2.0	3.0	3.0	2.6
Oncology	1.3	1.3	1.3	5.8	6.2	1.9
Ophthalmology	1.5	1.4	1.7	6.6	7.0	2.5
Orthopedic Surgery	3.2	2.7	4.6	4.3	4.4	3.4
Radiology	5.7	5.8	5.5	8.3	8.5	6.3
Urology	1.0	0.9	1.2	3.6	3.7	2.7
Obstetrics/Gynecology	6.1	4.9	9.3	0.9	0.9	1.0
Other Specialty Care Physicians	16.4	15.3	19.3	17.4	17.5	16.1
Physicians Without a Specialty Identified	**5.7**	**5.0**	**7.5**	**1.4**	**0.6**	**11.1**
Non-Physician Health Care Professional	**10.1**	**11.1**	**7.7**	**4.4**	**4.2**	**6.6**
Chiropractor	2.1	2.7	0.5	0.3	0.3	0.1
Podiatrist	1.1	1.1	1.0	2.0	2.1	0.6
Physical Therapist	2.3	2.5	1.9	0.4	0.4	0.8
Clinical Social Worker/Psychologist	1.9	2.1	1.4	0.4	0.4	0.1
Other Non-Physician Health Care Professional	2.7	2.7	2.9	1.3	1.0	5.0
Other Providers	**13.6**	**16.1**	**7.5**	**8.2**	**7.4**	**18.4**
Ambulance Services	0.2	0.2	0.2	3.1	3.3	0.6
Independent Laboratory	5.0	6.5	1.1	3.5	3.7	1.0
Unidentified Specialty	3.0	4.2	0.2	0.0	0.0	0.3
Other Miscellaneous Providers	5.4	5.2	6.0	1.7	0.5	16.4
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

TABLE 11 (continued)

SPECIALTY	PRIVATE INSURANCE			MEDICARE		
	All Private	Private Non-HMO	Private HMO FFS	All Medicare	Medicare Non-HMO	Medicare HMO FFS
DISTRIBUTION OF WORK RVUs						
Primary Care Physicians	**25.4**	**28.1**	**19.3**	**21.3**	**21.8**	**13.9**
General Practice	4.2	5.6	1.0	0.8	0.8	0.5
Family Practice	3.6	3.6	3.6	3.4	3.4	3.0
Internal Medicine/Geriatrics	7.1	7.3	6.7	16.8	17.3	10.2
Pediatrics	5.7	4.7	8.0	0.1	0.1	0.2
Freestanding Clinic	4.7	6.8	0.0	0.2	0.2	0.0
Specialty Care Physicians	**47.4**	**42.2**	**59.2**	**65.0**	**65.3**	**59.6**
General Surgery	2.5	1.9	3.8	4.9	4.9	4.5
Anesthesiology	2.2	2.2	2.3	0.7	0.5	3.3
Cardiology	2.3	1.9	3.2	7.8	7.8	8.5
Emergency Medicine	2.3	1.8	3.5	2.4	2.5	2.1
Gastroenterology	1.4	1.1	2.1	3.1	3.1	3.2
Oncology	1.4	1.3	1.5	5.6	5.8	2.4
Ophthalmology	1.7	1.6	1.9	6.7	7.0	2.8
Orthopedic Surgery	3.5	2.7	5.1	4.4	4.4	4.2
Radiology	4.4	4.8	3.5	5.9	5.9	5.3
Urology	1.1	1.0	1.4	3.4	3.4	3.2
Obstetrics/Gynecology	6.7	5.2	10.1	1.1	1.1	1.3
Other Specialty Care Physicians	17.7	16.5	20.6	19.0	19.0	18.7
Physicians Without a Specialty Identified	**4.5**	**3.5**	**6.7**	**1.4**	**0.7**	**11.7**
Non-Physician Health Care Professional	**11.9**	**13.2**	**9.2**	**5.1**	**5.1**	**5.9**
Chiropractor	2.7	3.6	0.6	0.4	0.4	0.1
Podiatrist	1.2	1.3	1.1	2.1	2.2	0.9
Physical Therapist	2.8	2.8	2.6	0.5	0.5	1.1
Clinical Social Worker/Psychologist	3.0	3.2	2.6	0.9	0.9	0.1
Other Non-Physician Health Care Prof.	2.1	2.2	1.8	1.0	1.0	1.4
Other Providers	**10.8**	**13.1**	**5.6**	**7.2**	**7.1**	**8.9**
Ambulance Services	0.2	0.2	0.1	2.2	2.3	0.6
Independent Laboratory	6.0	7.7	2.1	4.4	4.5	2.6
Unidentified Specialty	2.5	3.5	0.2	0.0	0.0	0.3
Other Miscellaneous Providers	2.1	1.7	3.1	0.6	0.3	5.4
Total	100.0	100.0	100.0	100.0	100.0	100.0

Utilization Limited to Patients of Practitioner Specialties by Payer

Proportion of All Recipients Seen by Major Specialties

This section discusses the use of services in terms of how recipients obtain care from each of the major specialties and by payer. The tables that follow differ from Tables 10 and 11, which presented the average payments (and associated RVUs) and the distributions received by the specialties for all of the patients of each payer. Tables 12 and 13 reflect the number of patients seen by a specialty category in the year. Table 12 shows the proportions of each payer's total recipients that became patients of the specialty, i.e.,

the proportion of total recipients who received at least one billed service from a provider in that specialty category. Nearly two-thirds of all private non-HMO patients (65.0 percent) visit a primary care physician at least once during the year. Similarly, about 60 percent of private non-HMO patients receive specialized services at least once, most commonly from a radiologist (24.2 percent of all recipients), obstetrician/gynecologist (16.9 percent), or emergency medicine specialist (10.2 percent). Nearly 38 percent of all patients obtain services from "other providers," and independent laboratories are used by more than one-fourth of the patients. Non-physician practitioners are seen by less than one-fifth of all recipients.

The utilization patterns differ somewhat for private HMO FFS patients. The proportion seeing specialists (64.6 percent) are somewhat greater than the proportion seeing primary care physicians (57.7 percent). The proportions of HMO FFS patients seeing "other providers" (23.8 percent) and non-physician practitioners (9.3 percent) are also below the respective non-HMO proportions. Like non-HMO patients, the most commonly seen specialty care physicians are radiologists (19.7 percent), obstetricians/gynecologists (18.3 percent), and emergency medicine specialists (13.0 percent). Private non-HMO patients are more likely to see a general practitioner than HMO FFS patients who more often receive services from pediatricians and family practice physicians.

Nearly 9 out of every 10 patients under traditional Medicare use specialty services with the majority seeing a radiologist (61.5 percent), over one-third an ophthalmologist (44.5 percent) or cardiologist (35.8 percent), and about one-fifth an emergency medicine specialist. The proportion of HMO FFS patients who use specialists is slightly lower at 76 percent with about one-third of all HMO FFS patients seeing a radiologist and about one-fifth a cardiologist. Generally, the proportion of HMO FFS patients who seek individual physician specialties is much lower than for traditional Medicare patients.

Medicare non-HMO patients are also more likely to see a primary care physician than are other patient populations. More than 82 percent of Medicare non-HMO patients seek the care of a primary care physician at least once during the year, compared with about two-thirds of Medicare HMO FFS patients. Two-thirds of Medicare non-HMO patients see an internist/geriatrician compared to 46 percent of Medicare HMO FFS members. More than one-third of traditional Medicare patients visit a non-physician health care professional with podiatrists seeing more than one-fifth of all Medicare non-HMO patients. About two-thirds of traditional Medicare patients see "other providers," and more than half obtain lab services. In contrast, 14 percent of HMO FFS patients see a non-physician health care professional and just one-third see "other providers." The proportions of HMO FFS recipients seeing any particular specialty is lower than in traditional Medicare services for all specialties except family practice physicians and "other miscellaneous providers." This seems to imply that use of the various specialties is more targeted in Medicare HMO FFS patients.

TABLE 12
PROPORTION OF ALL RECIPIENTS SEEN BY THE SPECIALTY GROUP
BY PRACTITIONER SPECIALTY AND PAYER - 1998

SPECIALTY	PRIVATE INSURANCE			MEDICARE		
	All Private	Private Non-HMO	Private HMO FFS	All Medicare	Medicare Non-HMO	Medicare HMO FFS
Primary Care Physicians	**62.3**	**65.0**	**57.7**	**80.5**	**82.4**	**65.6**
General Practice	6.2	8.6	1.9	5.0	5.3	2.5
Family Practice	15.7	14.8	17.4	22.7	22.7	22.8
Internal Medicine/Geriatrics	21.7	21.8	21.4	64.3	66.7	45.6
Pediatrics	17.6	14.7	22.7	0.6	0.5	1.5
Freestanding Clinic	11.0	17.2	0.1	2.1	2.4	0.1
Specialty Care Physicians	**61.9**	**60.4**	**64.6**	**88.4**	**89.9**	**76.1**
General Surgery	4.6	4.7	4.6	14.9	15.7	8.7
Anesthesiology	5.0	5.8	3.6	16.2	17.5	6.1
Cardiology	5.2	4.5	6.5	34.3	35.8	22.8
Emergency Medicine	11.2	10.2	13.0	20.4	21.8	9.6
Gastroenterology	3.3	3.2	3.4	13.3	13.9	9.4
Oncology	0.9	0.9	0.9	6.9	7.5	2.2
Ophthalmology	6.0	6.6	4.8	40.8	44.5	11.8
Orthopedic Surgery	7.3	7.1	7.6	15.5	16.3	9.7
Radiology	22.6	24.2	19.7	58.3	61.5	33.7
Urology	2.7	2.9	2.4	13.7	14.2	9.3
Obstetrics/Gynecology	17.4	16.9	18.3	11.4	11.8	8.4
Other Specialty Care Physicians	31.4	32.4	29.7	53.3	55.2	38.1
Physicians Without a Specialty Identified	**8.7**	**6.6**	**12.4**	**4.3**	**1.7**	**24.3**
Non-Physician Health Care Professional	**15.5**	**19.1**	**9.3**	**33.9**	**36.5**	**13.9**
Chiropractor	2.1	3.0	0.5	2.0	2.2	0.4
Home Health Provider	0.2	0.1	0.3	2.3		2.3
Podiatrist	3.7	4.3	2.7	20.6	22.4	6.6
Physical Therapist	2.4	2.5	2.1	1.6	1.6	2.1
Clinical Social Worker/Psychologist	2.1	2.5	1.4	1.8	2.0	0.3
Other Non-Physician Health Care Prof.	6.7	8.9	2.9	14.2	15.5	3.4
Other Providers	**32.8**	**37.8**	**23.8**	**62.6**	**66.3**	**33.6**
Ambulance Services	0.4	0.5	0.3	8.7	9.5	2.2
Independent Laboratory	25.1	28.5	19.0	55.2	59.4	22.4
Unidentified Specialty	5.1	7.8	0.3	0.2	0.0	1.5
Other Miscellaneous Providers	5.5	5.3	5.9	11.0	10.9	12.1
Total	**251.8**	**266.6**	**225.8**	**515.6**	**538.5**	**319.9**

Note: May sum to more than 100 percent because a recipient could have been seen by more than one specialty group.

Average Spending and RVUs for Recipients seen by Specialties

Table 13 illustrates the average utilization by patients for the various specialties. The mean payments and work RVUs are calculated by counting only the recipients who received services from that specialty. This differs from Table 10, which presented the average payments (and associated RVUs) received by specialties for all patients of each payer. Table 13 is supplemented by Appendix E that includes more individual specialties.

TABLE 13
MEAN TOTAL EXPENDITURE AND TOTAL WORK RVUs
PER PRACTITIONER SPECIALTY RECIPIENT BY PAYER - 1998

SPECIALTY	PRIVATE INSURANCE			MEDICARE		
	All Private	Private Non-HMO	Private HMO FFS	All Medicare	Medicare Non-HMO	Medicare HMO FFS
MEAN TOTAL EXPENDITURES PER RECIPIENT						
Primary Care Physicians	**$281**	**$330**	**$184**	**$421**	**$442**	**$206**
General Practice	590	625	321	231	233	197
Family Practice	161	192	114	229	242	128
Internal Medicine/Geriatrics	218	245	170	419	437	217
Pediatrics	210	227	191	177	199	113
Freestanding Clinic	267	267	213	196	196	338
Specialty Care Physicians	**551**	**563**	**531**	**1,407**	**1,471**	**820**
General Surgery	350	322	401	471	474	427
Anesthesiology	406	361	532	303	301	329
Cardiology	416	422	409	498	496	513
Emergency Medicine	131	125	140	165	164	185
Gastroenterology	300	276	340	408	415	328
Oncology	1,039	1,173	816	1,564	1,584	1,028
Ophthalmology	183	175	202	300	301	248
Orthopedic Surgery	326	309	354	514	522	411
Radiology	184	195	162	261	264	222
Urology	276	264	302	489	501	343
Obstetrics/Gynecology	258	235	295	144	145	135
Other Specialty Care Physicians	383	386	378	599	608	502
Physicians Without a Specialty Identified	**481**	**618**	**352**	**587**	**671**	**541**
Non-Physician Health Care Professional	**477**	**475**	**484**	**239**	**223**	**558**
Chiropractor	726	739	591	271	270	293
Podiatrist	212	214	207	178	180	112
Physical Therapist	711	801	525	486	497	423
Clinical Social Worker/Psychologist	667	703	556	425	426	341
Other Non-Physician Health Care Professional	237	220	327	134	122	578

SPECIALTY	PRIVATE INSURANCE			MEDICARE		
	All Private	Private Non-HMO	Private HMO FFS	All Medicare	Medicare Non-HMO	Medicare HMO FFS
MEAN TOTAL EXPENDITURES PER RECIPIENT (continued)						
Other Providers	**304**	**347**	**183**	**242**	**215**	**649**
Ambulance Services	304	285	362	646	655	354
Independent Laboratory	145	187	34	115	118	53
Unidentified Specialty	434	435	366	243	217	244
Other Miscellaneous Providers	720	801	591	281	92	1,608
Total	**732**	**818**	**581**	**1,839**	**1,922**	**1,187**
MEAN TOTAL WORK RVUs PER RECIPIENT						
Primary Care Physicians	**3.68**	**4.25**	**2.55**	**7.07**	**7.47**	**3.19**
General Practice	6.13	6.42	3.84	4.14	4.22	2.95
Family Practice	2.07	2.39	1.59	3.96	4.22	2.00
Internal Medicine/Geriatrics	2.96	3.30	2.37	7.00	7.32	3.36
Pediatrics	2.95	3.18	2.69	3.00	3.41	1.80
Freestanding Clinic	3.90	3.90	2.69	2.94	2.95	1.77
Specialty Care Physicians	**6.91**	**6.88**	**6.97**	**19.66**	**20.51**	**11.78**
General Surgery	4.87	4.09	6.29	8.75	8.82	7.71
Anesthesiology	4.06	3.73	5.01	1.16	0.84	8.28
Cardiology	4.04	4.23	3.80	6.09	6.13	5.64
Emergency Medicine	1.90	1.76	2.08	3.21	3.20	3.37
Gastroenterology	3.94	3.47	4.70	6.23	6.33	5.09
Oncology	13.79	14.68	12.30	21.87	22.09	16.21
Ophthalmology	2.55	2.36	2.99	4.40	4.43	3.59
Orthopedic Surgery	4.29	3.79	5.11	7.51	7.58	6.55
Radiology	1.78	1.97	1.37	2.70	2.72	2.35
Urology	3.77	3.47	4.40	6.62	6.75	5.11
Obstetrics/Gynecology	3.46	3.01	4.20	2.50	2.52	2.31
Other Specialty Care Physicians	5.10	5.01	5.28	9.51	9.70	7.41
Physicians Without a Specialty Identified	**4.68**	**5.25**	**4.15**	**8.76**	**11.56**	**7.24**
Non-Physician Health Care Professional	**6.94**	**6.78**	**7.52**	**4.04**	**3.92**	**6.37**
Chiropractor	11.60	11.85	9.14	5.24	5.24	5.46
Home Health Provider	10.01	6.25	12.89	15.07		15.07
Podiatrist	2.94	2.90	3.05	2.78	2.81	2.01
Physical Therapist	10.44	10.98	9.31	8.29	8.38	7.79
Clinical Social Worker/Psychologist	12.96	12.67	13.84	13.34	13.48	6.31
Other Non-Physician Health Care Prof.	2.78	2.42	4.72	1.98	1.86	6.22
Other Providers	**2.97**	**3.40**	**1.78**	**3.08**	**3.02**	**3.97**
Ambulance Services	3.58	3.49	3.85	6.72	6.79	4.25
Independent Laboratory	2.16	2.66	0.85	2.13	2.15	1.72
Unidentified Specialty	4.42	4.42	4.43	2.81	0.89	2.91
Other Miscellaneous Providers	3.45	3.11	3.99	1.46	0.71	6.70
Total	**9.03**	**9.85**	**7.61**	**26.73**	**28.23**	**15.04**

Private Non-HMO

The most expensive patients of private non-HMO payers are those seen by oncologists with an average payment of $1,173 per patient. In contrast, the lowest average payment goes to emergency medicine practitioners. Within primary care physicians, the highest expenditure per recipient is for patients of general practitioners, $625, and the lowest is for patients of family practice physicians. Mean expenditures for patients of physical therapists ($801) and chiropractors ($739) rank highest among non-physician health care professionals while patients of podiatrists ($214) are the least expensive.

Private HMO FFS

For all primary care physician specialties, the average mean FFS payment for patients is lower than in non-HMOs. The greatest percent difference is for general practice physicians whose HMO patients' average FFS payments 49 percent below that of non-HMO patients. Most specialty care physicians receive a higher average FFS payment for HMO patients than non-HMO patients. The greatest relative difference occurs for anesthesiologists at 47 percent. Radiologists and oncologists are two specialty types that receive 17 percent and 30 percent less for an HMO patient, on average, than for a non-HMO counterpart. Among non-physician providers, patients of "other non-physician practitioners" have average payments 49 percent above those in non-HMOs, and average reimbursement for recipients of ambulance services is also higher (27 percent).

Overall, the number of work RVUs provided per service (or average service intensity) is higher for HMO services than non-HMO services (Chapter 2) and this holds true for those services received by patients of most of the identified specialties. The only exceptions to this rule are chiropractors, family practice and radiology physicians, and independent laboratories whose services are 7, 12, 27, and 99 percent, respectively, more intense for non-HMO than HMO patients. Not surprisingly, specialty care physicians have the highest overall service intensity of all identified specialties for both non-HMOs and HMOs, with anesthesiology and general surgery ranking highest in mean RVUs for both payers at 2.07 and 1.57, respectively in non-HMO services and 2.95 and 2.73, respectively, in HMO services. The largest service intensity gaps between delivery systems in specialty care occur in obstetrics/gynecology services and general surgical services, which are 84 and 74 percent more intensive, respectively, in HMO FFS services. This is important because even when non-HMO patients see physician specialists, the services they receive are less complex than those received by HMO patients visiting the same specialties. This suggests that specialists are used more often in HMOs to render more complex care, which may be interpreted as a more efficient use of specialists. Greater service complexity is not limited to physicians, however. The HMO FFS services of both podiatrists and clinical social workers/psychologists are also more intensive than their non-HMO services.

Medicare Non-HMO and HMO FFS

The largest mean total expenditures per patient across all payers is $1,584 paid by traditional Medicare to oncologists. The next highest mean payments per patient in traditional Medicare go to Nephrologists at $1,004 and hematologists at $895.[7] Among primary care physicians, patients of internal medicine/geriatrics are the most expensive, and patients of non-physician health care providers, physical therapists have the highest average payment per patient. Oncologists have the highest HMO FFS mean payment per patient among specialists, but among primary care physicians the mean payment is higher for patients of practitioners classified as freestanding clinics than for internal medicine/geriatric physicians who rank second.

Unlike the private sector, the average FFS payment per patient is consistently lower in HMO services for physician services, with the only exceptions being anesthesiology, cardiology, and providers classified as freestanding clinics. Unlike the private sector, Medicare HMO FFS mean payments are higher than those of traditional Medicare for patients served by chiropractors (9 percent higher) and "other miscellaneous providers." Part of these differences may be attributable to HMOs' difficulty in identifying specialties. As in the private sector, the mean FFS payment for patients of "other non-physician health practitioners" is higher in HMOs, but the gap is much larger with a 374 percent difference.

Conclusions

Maryland's supply of physicians is above the national average and above the average for the region. Within the state, physician supply is highest in the National Capital Area and lowest in Southern Maryland. The Baltimore Metro Area has a similar physician supply to the National Capital Area but has fewer office-based and more non-office based physicians. The presence of two medical schools and numerous acute care facilities contributes significantly to this mix. The Eastern Shore and Western Maryland have similar levels of physician supply and fall below the national and regional averages. Both of these regions rely disproportionately on office-based providers to render care. Although payers have been increasingly aggressive in seeking discounts from practitioners, no evidence exists to suggest that that trends in physician supply are changing. Since MHCC began conducting these analyses in 1995, Maryland has had a physician supply approximately 35 percent above the national level.

A moderate inverse relationship exists between the percentage of a payer population using a specialty and the intensity level at which that specialty is used on a per recipient basis. Some specialties treat larger numbers of patients infrequently and others treat fewer patients at a higher intensity level. For example, oncologists treat 2 percent or less of each payer's recipient population, except for Medicare non-HMO, yet oncologists

[7] Appendix E contains complete tables of the average payments and RVUs by practitioner and payer categories.

have the largest average total payments per recipient for all payers. Radiologists and internists see significant portions of all patient populations, but intensity of service per recipient measured by RVUs is below the primary and specialty averages, respectively. This pattern does not exist in the Medicare non-HMO patient population, perhaps due to this group's overall higher demand for all types of service.

Specialty care physicians as a group receive the largest share of all dollars allocated by each payer. These patterns are consistent with supply levels because medical and surgical specialists constitute about two thirds of all physicians providing patient care in Maryland. Analysis of patient use patterns shows that, on average, these practitioners have the highest payments and RVUs per recipients. However, these relationships are not strong and the confounding effect of capitation must be considered before reaching any conclusions.

Analyses completed in this chapter suggest that the demand for services within the physician sector is relatively consistent for private payers. Differences that occur from one specialty to another could be driven by factors such as the higher proportions of young adults and children enrolled in HMOs, hence the higher use of obstetrical and orthopedic specialties. Higher proportions of adults age 45-65 in non-HMOs may explain the more intensive use of internal medicine specialties and non-physician providers. For the Medicare population enrolled in non-HMOs, use of practitioners is both more intensive and more varied compared to the population enrolled in Medicare HMOs. Overall, the Medicare non-HMO population is treated by five different practitioner categories compared to about three categories of practitioners through HMOs. The difference between non-HMO Medicare and HMO populations in utilization is proportionately greater for physician categories and for most non-physician professional categories. The cause for this more narrow range of care and reduced resource use in Medicare HMOs deserves further in-depth study.

Non-HMO spending per recipient is higher than spending by HMO FFS for private payers and Medicare. Differences are significant: 41 percent higher for private payers and 62 percent higher for Medicare. Patient management practices, selection bias, and most importantly, the exclusion of capitated data likely contribute to these differences. Limitation presented by the lack of capitated information is a major factor in why conclusions must be carefully qualified. For private payers, the impact of capitation is particularly confounding for primary care utilization where non-HMOs spending exceeds HMO spending $215 to $106, despite HMO preferences for use of primary care providers. Primary care is one sector of physician practice where use of capitated contracting is most commonplace.

The overall per recipient utilization is higher for non-HMOs but per recipient spending on specialty care physicians is approximately the same at $340 vs. $343. The intensity of care is slightly higher in the HMO setting as reflected in RVUs at 4.15 vs. 4.5. Among Medicare patients a different pattern emerges, per recipient utilization measured by spending and RVUs is significantly through the non-HMO traditional Medicare program. This pattern is consistent for all specialty physician categories. For the Medicare population, selection bias is likely a factor in explaining these hefty differences. Analyses presented in Chapter 2 confirm that Medicare HMO patients are younger than the overall Medicare patient population.

Non-physician providers experienced significantly lower overall HMO utilization regardless of the services provided. Chiropractors, psychologists, and podiatrists experience significant declines in utilization when care is delivered through an HMO. Because of missing capitated information, this conclusion must be interpreted cautiously as these providers may also render care under non-FFS arrangements.